

wherein a thickness of the covering is calibrated so that when said device is immersed, the effervescent material begins to react with sea water only after said device has been sinking for a predetermined length of time and is at a depth of about 10 meters.

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16/ (New) A decoy device for wake-following torpedoes, the device comprising a body of effervescent material that reacts with sea water to generate a cloud of bubbles simulating a phony wake, the device being characterized in that it has a covering made of an organic material which is hydroxypropymethyl cellulose or a derivative thereof, a gum of vegetable or animal origin, a polyvinyl alcohol, a poly (N-vinylpyrrolidone), a poly (ethylene oxide), or a mixture thereof, that is soluble in sea water which delays the reaction of the effervescent material with sea water; and

wherein a thickness of the covering is calibrated so that when said device is immersed, the effervescent material begins to react with sea water only after said device has been sinking for a predetermined length of time and is at a depth of about 10 meters.

REMARKS

Claims 1-14 were examined, claims 1-3 and 5/1 and 5/3 stand rejected, claims 6-14 are objected to and have not been further treated on the merits. Applicants note, with appreciation, the Patent Office's objection to claims 4 and 5/4 as objected to but allowable if rewritten in independent form. Applicants cancel claim 4, amend claim 5 to depend only from claims 1-3, and add claims 15 and 16. Additional claim 15 corresponds to claim 4 written in independent form, and thus includes claims 1-4. Also, added claim 16 corresponds with claim 5/4 written in independent form, and thus includes claims 1-5. Applicants also amend claims 3 and 6-13. Applicants reserve the right to prosecute the former claims in a divisional or continuation application. Applicant submits redlined correct Figure 1 for approval, adds titles to sections of the specification, and asserts that no new matter is added herein and that the claims are fully disclosed in the specification. Applicants also submit the attached Application Data Sheet, and an Information Disclosure Statement. Applicants respectfully request

reconsideration of pending claims 1-14, as amended, in view of at least the following remarks.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attachment is captioned "Version With Markings to Show Changes Made."

I. Claims Rejected Under 35 U.S.C. §112

The Patent Office rejects claim 3 under 35 U.S.C. §112, second paragraph, as being indefinite due to insufficient antecedent basis for "the thickness" in line 2 of claim 3. Applicants have amended claim 3 to provide proper antecedent basis, and submit that claim 3, as amended, complies with 35 U.S.C. §112. Therefore, Applicants respectfully request that the Patent Office withdraw the rejection of claim 3 under 35 U.S.C. §112.

II. Claims Rejected Under 35 U.S.C. §103

The Patent Office rejects claims 1-3 and 5/1 - 5/3 under 35 U.S.C. §103(a) as being unpatentable over Schillreff, et al. (U.S. Patent No. 3,808,940) ("Schillreff") in view of Shimizu, et al. (U.S. Patent No. 5,824,339) ("Shimizu"). The Patent Office states:

Claims 1-3 and 5/1-5/3 are rejected under 35 U.S.C. §103(a) as being unpatentable over Schillreff in view of Shimizu. In regards to claim 1, Schillreff discloses the claimed invention in figure 7 and column 7 lines 5-7, lines 11-14, and lines 21-24. The underwater decoy rounds disperse tablets of lithium hydride (effervescent material) over the surface of the water to produce bubble columns as they sink, which affects sonar and acoustic homing devices. Schillreff does not illustrate that the lithium hydride contains a covering that delays the reaction between the lithium hydride and the seawater.

Shimizu teaches in column 4 lines 38-44, that a coating that can be sued to delay the reaction between an effervescent material and water is ethanol-insoluble water-soluble polymers such as hydroxypropylmethylcellulose, also known as HPMC.

Applicants submit that claim 1, is not obvious from Schillreff in view of Shimizu for at least the reason that the cited references do not teach, suggest or describe a covering of material that is soluble in seawater which delays the reaction of the

effervescent material with seawater, as required by Applicants' independent claim 1. To render a claim obvious, all elements of that claim must be taught or suggested by at least one properly combined reference such that the invention as a whole would have been obvious to one skilled in the art at the time the invention was made. In the Patent Office's rejection of claim 1, the Patent Office relies upon col. 4, lines 38-44 of Shimizu to address the limitations of claim 1 cited above. The portion of Shimizu cited by the Patent Office describes a drug delivery pill for oral ingestion that has a core shell power spray coated with a liquid mixture containing a water soluble polymer and at least one physiologically active substance and an effervescing component. However, the Patent Office has not identified and the Applicants have been unable to find any teaching in Shimizu that provides for a covering material that is soluble in seawater which delays the reaction of the effervescent material with seawater, as required by Applicants' independent claim 1. There is no mention in Shimizu of seawater, nor of delaying a reaction of effervescent material with seawater, and certainly no teaching of a covering that is soluble in seawater for delaying the reaction of an effervescent material with seawater. Hence, Applicants traverse that the technology of Shimizu applies in seawater and respectfully requests that the Patent Office should cite a reference in support of this position in accordance with MPEP §2144.03.

Moreover, as the Patent Office admits, Schillreff does not teach a covering that delays the reaction between the lithium hydride and the seawater. Therefore, the covering of material that is soluble in seawater which delays the reaction of the effervescent material with seawater of Applicants' independent claim 1 is not taught by Schillreff only the water soluble polymer of Shimizu. Thus, the Applicants respectfully request that the Patent Office withdraw the rejection of independent claim 1 under 35 U.S.C. §103(a) as unpatentable from Schillreff in view of Shimizu.

Moreover, Applicants point out that the composition, purpose and products of Shimizu relate to technical fields very far from that of the invention. Specifically, as opposed to Applicants' torpedo decoys, Shimizu relates to "in the food, pharmaceutical and agro-chemical fields." (Col. 1, lines 3-9) Thus, one skilled in the art of the torpedo decoy field of Applicants' invention would in no way be expected to have common knowledge or consider as "well-known" the orally ingested drug delivery technology

of Shimizu. Therefore, Applicants assert that Shimizu is non analogous art because the drug delivery system of Shimizu is not in the field of torpedo decoys and would not be reasonably pertinent to the particular problem of torpedo decoys. (MPEP §2141.01(a)) Thus, Applicants respectfully request that the Patent Office withdraw the rejection of claim 1 under 35 U.S.C. §103(a) for this second reason.

Moreover, Applicants assert that a proper motive for combining Schillreff with Shimizu has not been provided because the Examiner provides no motive for combining the cited references. Thus, Applicants respectfully request that for this third reason the Patent Office withdraw the rejection of claim 1 under 35 U.S.C. §103(a) as obvious from Schillreff in view of Shimizu because no motive for combining the references has been provided, as required by MPEP §2143.01.

Dependent Claims 2-3 and 5/1 - 5/3

Applicants respectfully submit that claims 2-3 and 5/1 - 5/3 being dependent upon respective allowable base claim 1 are also not unpatentable over the cited references for at least the foregoing reasons. Thus, Applicants respectfully request that the Patent Office withdraw the rejection of claims 2-3 and 5/1 - 5/3 under 35 U.S.C. §103(a).

Allowable Subject Matter

The Patent Office objects to claims 4 and 5/4 as allowable if rewritten in independent form. Applicants have rewritten claim 4 in independent form as claim 15, and rewritten claim 5/4 in independent form as claim 16. Applicants have also have canceled claim 4 and amended claim 5 to depend only on claims 1-3.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would

be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.


Respectfully submitted,
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Dated: December 12, 2002

By: _____
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on December 12, 2002.



Margaux Rodriguez December 12, 2002

Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE SPECIFICATION

A paragraph has been added before the paragraph beginning on page 1, line 2:

"BACKGROUND OF THE INVENTION

Field of the Invention"

A paragraph has been added before the paragraph beginning on page 1, line 4:

"Background"

A paragraph has been added before the paragraph beginning on page 1, line 14:

"BRIEF SUMMARY OF THE INVENTION"

A paragraph has been added before the paragraph beginning on page 2, line 5:

"BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS"

A paragraph has been added before the paragraph beginning on page 2, line 10:

"DETAILED DESCRIPTION OF THE INVENTION"

IN THE CLAIMS

Claim 4 has been canceled.

The claims have been amended as follows:

3/ (Amended) A device according to claim 2, characterized in that [the]a thickness of the covering is calibrated so that when said device is immersed, the effervescent material begins to react with sea water only after said device has been sinking for a predetermined length of time.

5/ (Amended) A device according to any one of claims 1 to [4]3, characterized in that the covering is made of a material which is hydroxypropymethyl cellulose or a

derivative thereof, a gum of vegetable or animal origin, a polyvinyl alcohol, a poly (N-vinylpyrrolidone), a poly (ethylene oxide), or a mixture thereof.

6/ (Amended) A device according to [any preceding]claim 1, characterized in that the effervescent material comprises a mixture of tartaric acid and of sodium hydrogen carbonate.

7/ (Amended) A device according to [any one of claims 1 to 5]claim 1, characterized in that the effervescent material comprises a mixture of citric acid and of sodium hydrogen carbonate.

8/ (Amended) A device according to claim [6 or]7, characterized in that the mixture is substantially stoichiometric.

9/ (Amended) A device [cording to any one of claims 5 to 8]according to claim 1, characterized in that the effervescent material includes a lubricant[, e.g. magnesium stearate].

10/ (Amended) A device according to [any one of claims 5 to 9]claim 1, characterized in that the effervescent material has grains in a size range of less than 100 μm .

11/ (Amended) A device according to [any preceding]claim 1, characterized in that the effervescent material is such that the bubbles generated thereby at a depth of 10 meters are of dimensions lying in the range 30 μm to 50 μm .

12/ (Amended) A device according to [any preceding]claim 1, characterized in that it further includes ballast-forming means, for the purpose of enabling it to sink faster.

13/ (Amended) A torpedo decoying method, characterized in that devices according to [any preceding]claim_1 are dispersed in the sea from the air.

Claims 15 and 16 have been added.